



TRANSMITTAL FORM

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Total Number of Pages in This Submission

14

Application Number

10/645,265

Filing Date

August 20, 2003

First Named Inventor

Andreina P. Gomez

Art Unit

3738

Examiner Name

Thomas Sweet

Attorney Docket Number

ACS 65048

ENCLOSURES (Check all that apply)

Fee Transmittal Form
 Fee Attached
 Amendment / Reply
 After Final
 Affidavits/declaration(s)
 Extension of Time Request
 Express Abandonment Request
 Information Disclosure Statement
 Certified Copy of Priority Document(s)
 Response to Missing Parts/ Incomplete Application
 Reply to Missing Parts under 37 CFR 1.52 or 1.53

Drawing(s)
 Licensing-related Papers
 Petition
 Petition to Convert to a Provisional Application
 Power of Attorney, Revocation Change of Correspondence Address
 Terminal Disclaimer
 Request for Refund
 CD, Number of CD(s) _____
 Landscape Table on CD

Remarks

24201

After Allowance Communication to TC
 Appeal Communication to Board of Appeals and Interferences
 Appeal Communication to TC (Appeal Notice, Brief, Reply)
 Proprietary Information
 Status Letter
 Other Enclosure(s) (please identify below):
Postcard Request for Certificate of Correction

Certificate

NOV 04 2005

of Correction

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name **FULWIDER PATTON LEE & UTECHT, LLP**

Signature

Printed name

JOHN S. NAGY, ESQ.

Date

October 28, 2005

Reg. No. **30,664**

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

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Date

October 28, 2005

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PTO/SB/17 (12-04v2)

Approved for use through 07/31/2006. OMB 0651-0032

Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

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Effective on 12/08/2004.

Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R.

FEE TRANSMITTAL for FY 2005

 Applicant claims small entity status. See 37 CFR 1.27
TOTAL AMOUNT OF PAYMENT (\$)
\$100.00

Complete if Known

Application Number	10/645,265
Filing Date	August 20, 2003
First Named Inventor	Andreina P. Gomez
Examiner Name	Thomas Sweet
Art Unit	3738
Attorney Docket No.	ACS 65048

METHOD OF PAYMENT (check all that apply)

 Check Credit Card Money Order None Other (please identify): _____

 Deposit Deposit Account Number: 06-2425 Deposit Account Name: FULWIDER PATTON

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

Charge fee(s) indicated below Charge fee(s) indicated below, except for the filing fee

Charge any additional fee(s) or any underpayment of fee(s) under 37 CFR 1.16 and 1.17 Credit any overpayments

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FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fees Paid (\$)
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description

Each claim over 20 (including Reissues)

Small Entity

Fee (\$)

Fee (\$)

Each independent claim over 3 (including Reissues)

50

25

Multiple dependent claims

200

100

360

180

Multiple Dependent Claims

Total Claims	Extra	Fee (\$)	Fee Paid (\$)	Fee (\$)	Fee Paid (\$)
- 20 or HP =	x	\$18.00	= \$0.00		

HP = highest number of total claims paid for, if greater than 20.

Indep. Claims	Extra	Fee (\$)	Fee Paid (\$)
- 3 or HP =	x	\$84.00	= \$0.00

HP = highest number of independent claims paid for, if greater than 3.

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listing under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof.

See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
- 100 =	0	/ 50 0 (round up to a whole)	x \$250.00 =	\$0.00

4. OTHER FEE(S)

Non-English specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Certification of Correction

\$100.00

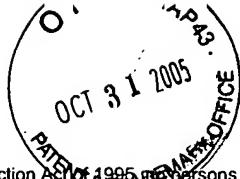
SUBMITTED BY

Signature		Registration No. (Attorney/Agent)	30,664	Telephone	(310) 824-5555
Name (Print/Type)	JOHN S. NAGY, ESQ.		Date	October 28, 2005	

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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FEE TRANSMITTAL for FY 2005

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First Named Inventor	Andreina P. Gomez
Examiner Name	Thomas Sweet
Art Unit	3738
Attorney Docket No.	ACS 65048

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Check Credit Card Money Order None Other (please identify): _____
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Each independent claim over 3 (including Reissues)	200 100
Multiple dependent claims	360 180

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NOV 08 2005



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of

ANDREINA P. GOMEZ ET AL.

Patent No.: 6,929,657 B2

Issued: August 16, 2005

Serial No: 10/645,265

Filed: August 20, 2003

For: INTRAVASCULAR STENT

Examiner: Thomas Sweet

Group Art Unit: 3738

Client ID/Matter No: ACS 65048 (2908C)

October 28, 2005
Los Angeles, California

REQUEST FOR CERTIFICATE OF CORRECTION

Certificate of Correction Department
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

The above-identified patent has been found to have the errors set forth in the enclosed Certificate of Correction. It is requested that this Certificate of Correction be issued and returned to us. Since these errors occurred in the final printing phase of the patent and in the final application, a check in the amount of \$100.00 is enclosed to cover the necessary fees. If any additional fees are needed, please charge Deposit Account No.

06-2425.

11/01/2005 SDENB0B1 00000012 6929657

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NOV 08 2005

The errors are verifiable in the patent application file as follows:

ERROR

Move Column 11, line 39, beginning with "The stent diameter", through Column 12, line 14, ending with "of the laser cutting path.", to Column 12, line 48, before paragraph beginning with "In order to minimize the heat input".

Column 14, line 28, delete "stent structure" and insert --stent structures--.

APPLICATION FILE

Patent application filed on August 20, 2003, pages 18 through 20. See Attachment A.

These errors occurred in good faith and correction thereof does not involve such changes in the patent as would constitute new matter or would require re-examination. It is requested that a Certificate of Correction be issued and returned to us.

Attached hereto, in duplicate, is Form PTO-1050, with at least one copy being suitable for printing.

A duplicate of this document is attached.

Respectfully submitted,

FULWIDER PATTON LEE & UTECHT, LLP

By: 
John S. Nagy
Registration No. 30,664

JSN:ck
Enclosures

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6060 Center Drive, Tenth Floor
Los Angeles, CA 90045
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Customer No. 24201

105175.1

portions 72, W-shaped portions 74, and the undulating links 54, all can be formed so that each has a variable thickness along the stent length. For example, the undulating link, and its associated arms 76,78 may be thicker at one end (arm 76) than at the other end of the link (arm 78). Further, first struts 66 and second struts 68 may vary in thickness (radial thickness) along their length in order to create variable flexibility in the rings. As shown in FIG. 16, first peak 60 has first struts 66 that have radial thick portion 80 in the middle of the struts and radial thin portion 82 near the ends of the struts. As another example, the rings at for example the proximal end of the stent may be thicker radially than the rings in the center of the stent. A variable thickness stent 5 that would benefit from the present invention is described and disclosed in U.S. Serial 10 No. 09/343,962 filed June 30, 1999 and entitled VARIABLE THICKNESS STENT AND METHOD OF MANUFACTURE THEREOF, which is incorporated herein in its entirety by reference thereto. A variable thickness stent would benefit from the 15 flexible nature of the present invention stent and still be crimped to a very low profile delivery diameter due to the novel relationship between the second peak 61 and the undulating link 54.

The stent 30 of the present invention can be mounted on a balloon catheter similar to that shown in the prior art device in FIG. 1. The stent is tightly compressed or crimped onto the balloon portion of the catheter and remains tightly 20 crimped onto the balloon during delivery through the patient's vascular system. When the balloon is expanded, the stent expands radially outwardly into contact with the body lumen, for example, a coronary artery. When the balloon portion of the catheter is deflated, the catheter system is withdrawn from the patient and the stent remains 25 implanted in the artery. Similarly, if the stent of the present invention is made from a self-expanding metal alloy, such as nickel-titanium or the like, the stent may be compressed or crimped onto a catheter and a sheath (not shown) is placed over the stent to hold it in place until the stent is ready to be implanted in the patient. Such sheaths are well known in the art. Further, such a self-expanding stent may be compressed or 30 crimped to a delivery diameter and placed within a catheter. Once the stent has been positioned within the artery, it is pushed out of the catheter or the catheter is withdrawn

proximally and the stent held in place until it exits the catheter and self-expands into contact with the wall of the artery. Balloon catheters and catheters for delivering self-expanding stents are well known in the art.

The stent 30 of the present invention can be made in many ways. One 5 method of making the stent is to cut a thin-walled tubular member, such as stainless steel tubing to remove portions of the tubing in the desired pattern for the stent, leaving relatively untouched the portions of the metallic tubing which are to form the stent. The stent also can be made from other metal alloys such as tantalum, nickel-titanium, cobalt-chromium, titanium, shape memory and superelastic alloys, and the noble metals 10 such as gold or platinum. In accordance with the invention, it is preferred to cut the tubing in the desired pattern by means of a machine-controlled laser as is well known in the art.

The tubing may be made of suitable biocompatible material such as stainless steel. The stainless steel tube may be Alloy type: 316L SS, Special Chemistry 15 per ASTM F138-92 or ASTM F139-92 grade 2. Special Chemistry of type 316L per ASTM F138-92 or ASTM F139-92 Stainless Steel for Surgical Implants in weight percent.

	Carbon (C)	0.03% max.
20	Manganese (Mn)	2.00% max.
	Phosphorous (P)	0.025% max.
	Sulphur (S)	0.010% max.
	Silicon (Si)	0.75% max.
	Chromium (Cr)	17.00-19.00%
25	Nickel (Ni)	13.00-15.50%
	Molybdenum (Mo)	2.00-3.00%
	Nitrogen (N)	0.10% max.
	Copper (Cu)	0.50% max.
	Iron (Fe)	Balance

The stent diameter is very small, so the tubing from which it is made must necessarily also have a small diameter. Typically the stent has an outer diameter on the order of about 0.06 inch in the unexpanded condition, the same outer diameter of the tubing from which it is made, and can be expanded to an outer diameter of 0.1 inch or more.

5 The wall thickness of the tubing is about 0.003 inch.

The tubing is mounted in a rotatable collet fixture of a machine-controlled apparatus for positioning the tubing relative to a laser. According to machine-encoded instructions, the tubing is rotated and moved longitudinally relative to the laser which is also machine controlled. The laser selectively removes the 10 material from the tubing by ablation and a pattern is cut into the tube. The tube is therefore cut into the discrete pattern of the finished stent.

The process of cutting a pattern for the stent into the tubing is automated except for loading and unloading the length of tubing. In one example, a CNC-opposing collet fixture for axial rotation of the length of tubing is used in conjunction 15 with a CNC X/Y table to move the length of tubing axially relatively to a machine-controlled laser. The entire space between collets can be patterned using the CO₂ laser set-up of the foregoing example. The program for control of the apparatus is dependent on the particular configuration used and the pattern to be ablated in the coating.

Cutting a fine structure (0.005 to 0.001 inch web width) requires minimal 20 heat input and the ability to manipulate the tube with precision. It is also necessary to support the tube yet not allow the stent structure to distort during the cutting operation. In order to successfully achieve the desired end results, the entire system must be configured very carefully. The tubes are made typically of stainless steel with an outside diameter in the range of about 0.060 inch to 0.070 inch and a wall thickness in 25 the range of about 0.002 inch to 0.005 inch. These tubes are fixtured under a laser and positioned utilizing a CNC to generate a very intricate and precise pattern. Due to the thin wall and the small geometry of the stent pattern (about 0.0035 inch typical web width), it is necessary to have very precise control of the laser, its power level, the focused spot size, and the precise positioning of the laser cutting path.



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In re the application of

ANDREINA P. GOMEZ ET AL.

Patent No.: 6,929,657 B2

Issued: August 16, 2005

Serial No: 10/645,265

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Examiner: Thomas Sweet

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NOV 6 8 2005

The errors are verifiable in the patent application file as follows:

ERROR

Move Column 11, line 39, beginning with "The stent diameter", through Column 12, line 14, ending with "of the laser cutting path.", to Column 12, line 48, before paragraph beginning with "In order to minimize the heat input".

Column 14, line 28, delete "stent structure" and insert --stent structures--.

APPLICATION FILE

Patent application filed on August 20, 2003, pages 18 through 20. See Attachment A.

Applicant error.

These errors occurred in good faith and correction thereof does not involve such changes in the patent as would constitute new matter or would require re-examination. It is requested that a Certificate of Correction be issued and returned to us.

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By:

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UNITED STATES PATENT AND TRADEMARK OFFICE
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Page 1 of 1

PATENT NO. : 6,929,657 B2

APPLICATION NO.: 10/645,265

ISSUE DATE : August 16, 2005

INVENTOR(S) : Andreina P. Gomez et al.

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John S. Nagy
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6060 Center Drive, 10th Floor
Los Angeles, CA 90045

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